

We claim:

1. A data collection module, comprising:

- a) a support having a predetermined form factor;
- b) an auto ID reader supported by the support, and operative for sensing encoded data on a record carrier positioned near the reader and for reading the encoded data; and
- c) a radio frequency (RF) transmitter supported by the support, and

operative for transmitting the data processed by said auto ID reader derived from the record carrier; and

10 2. The data collection module of claim 1, wherein the form factor occupies a space of approximately 1-1/2 inch x 1 inch x ¾ inch.

3. The data collection module of claim 2, wherein the support includes a printed circuit board on which electrical circuit components for the RF transmitter and auto ID readers are mounted.

15 4. The data collection module of claim 1, wherein the RF transmitter includes a first antenna, a second antenna, and a selection circuit for coupling the transmitter.

5. The data collection module of claim 1, wherein the auto ID reader is an interchangeable element that includes one of a bar code symbol reader, a smart card reader, a digital sensor, and a fingerprint detector.

20 6. The data collection module of claim 1, wherein the RF transceiver auto ID reader are supported within the predetermined form factor.

7. The data collection module of claim 1, wherein the RF receiver and the auto ID reader generate digital signals corresponding to the RF demodulated data and the auto ID encoded data respectively, and wherein the readers share a single IC for receiving and processing the digital signals.

5 8. A portable data collection terminal, comprising:

- a) a hand-held housing;
- b) a support supported by the housing and having a predetermined form factor;
- c) a radio frequency (RF) transceiver supported by the support, and

10 operative for communicating with a RF base station associated with a computer network for transferring data between the terminal and the network; and

15 d) a first and a second auto ID reader supported by the support, and operative for sensing encoded data in a first and a second data carrier of different types, respectively, and for reading the encoded data.

9. The data collection terminal of claim 8, wherein the form factor occupies a space for an SE 1200 scan engine.

10. The data collection terminal of claim 8, wherein the support includes a printed circuit board on which electrical circuit components for the RF transceiver and auto ID readers are mounted.

20 11. The data collection terminal of claim 8, wherein the RF transceiver includes a first antenna, a second antenna, and a circuit for modulating and demodulating the RF signal.

12. The data collection terminal of claim 8, wherein at least one auto ID includes a photodetector.

13. The data collection terminal of claim 8, wherein the RF transceiver and the first and second auto ID reader are supported within the predetermined form factor.

5        14. The data collection terminal of claim 8, wherein the RF transceiver and the auto ID reader generate digital signals corresponding to the RF signal and the auto ID encoded data respectively, and wherein the readers share a common processing integrated circuit for receiving and processing the digital signals, and for outputting the processed signals through at least one common interface.

10        15. A data collection method, comprising the steps of:

- a) supporting a radio frequency (RF) transceiver on a support having a predetermined form factor;
- b) supporting an auto ID reader on said support;
- c) sensing encoded data on a record carrier positioned near the reader and

15 reading the encoded data;

- d) transmitting the data processed by the auto ID reader by the transceiver.

16. A method as defined in claim 15, wherein the auto ID reader is one of a bar code reader, or a smart card reader.

20        17. A method as defined in claim 15, further comprising processing the data from the RF transceiver and the data from the auto ID reader in a common signal processing circuit.

18. A method as defined in claim 17, wherein said common signal processing circuit is implemented in a single integrated circuit.
19. A method as defined in claim 18, wherein the data from the auto ID reader is transmitted from the signal processing circuit directly to the RF transceiver for wireless transmission to an external communications network.
- 5        20. A method as defined in claim 15, wherein the RF transceiver provides wireless communications to an external computer network using the Bluetooth protocol.